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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

AMRANY, ADI

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/571,462	Applicant(s) VALDEMARSSON ET AL.	
	Examiner ADI AMRANY	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-18 is/are pending in the application.
- 4a) Of the above claim(s) 18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 is/are allowed.
- 6) ☒ Claim(s) 1,4-8 and 10-16 is/are rejected.
- 7) ☒ Claim(s) 2 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/17/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to Sugaya and Kosak have been considered but are moot in view of the new ground of rejection. Kirschner (US 4,445,077) discloses the amended electric drive circuit of claim 1 and method steps of controlling the thyristor of claim 13.

Drawings

2. Replacement figures 6-8 were received on February 17, 2009. These drawings are acceptable and will be entered.

Election/Restrictions

3. Newly submitted claim 18 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Inventions I (claims 1-17) and Invention II (claim 18) are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because Invention I does not require the transmission, operating rod, linkage or crank in order to physically connect the motor to the electrical component. The subcombination has separate utility such as controlling the mechanical connectivity between the electrical motor and the electrical component.

The examiner has required restriction between combination and subcombination inventions. Where applicant elects a subcombination, and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 18 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Objections

4. Claims 1-2, 8, 13-14 and 16 are objected to because consistent component names must be used throughout the claims. Applicants have alternated between reciting "energy bank" and "electric energy bank" to refer to the same component.
5. Claim 5 is objected to because there is no basis for the limitation of "the braking phase."
6. Claims 13 and 16 are objected to because there is no basis for the limitation of "the winding of the motor" (cl. 13, line 5; cl. 16, line 3). Further, the limitation of "motor"

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should read "rotating electric motor" and "winding" should read "stator winding" to maintain consistent terminology.

7. Claim 15 is objected to because the recited limitations are unclear. The claim does not indicate how "rotational movement" brakes or makes a current. The thyristor can be turned on/off to make or brake a current to induce rotation; but the rotation of the motor itself does not have affect on the current (as the current is used to control the motor).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 13-14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kirschner (US 4,445,077).

With respect to claim 1, Kirschner discloses a rotating electric motor for operating an electric component (col. 2, lines 37-40), said motor being adapted for an operating movement during a limited predetermined angular motion of the rotor of the motor, said motor comprising: An electric drive circuit (figure; col. 2, lines 30-37) for a stator winding of the motor, the electric circuit comprising at least one branch comprising an electric energy bank (10) and a thyristor (THn) which are connected in series with the stator winding (Ln), the at least one branch further comprising a diode (12) connected in

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parallel with the electrical energy bank, wherein the thyristor controls flow of current through the energy bank and stator winding (col. 2, lines 56-64; col. 3).

Since claim 2 recites that the electric energy bank is a capacitor, such a limitation is not present in claim 1.

With respect to claim 8, Kirschner discloses the thyristor is arranged to remain turned on until the energy bank is exhausted (col. 3, lines 8-13).

With respect to claim 13, Kirschner discloses a method for operating an electric component utilizing a rotational movement achieved by a rotating electric motor (col. 2, lines 37-40), comprising:

connecting a rotor of the motor to the electric component (col. 2, lines 51-55);

bring the motor to carry out a limited predetermined angular motion by driving a current through the winding (L_n) of the motor (col. 2, lines 1-10, 56-64);

connecting a winding of the motor to an energy bank (10) via a thyristor (T_{hn} ; col. 2, lines 30-37); and

applying a first turn-on signal to the thyristor to cause a current to flow through from the energy bank through the winding of the motor, thereby generating a torque on a rotor of the motor (col. 3, lines 8-39); and

applying a second turn-on signal to the thyristor causing current to flow in a same direction as after applying the first turn-on signal, thereby reversing the torque applied on a rotor of the motor (col. 3, line 51 to col. 4, line 2).

The “thereby” clauses of claim 13 are interpreted as inherent end results of performing the recited method step of applying a first/second turn-on signal. Claim 13

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only recites limited structure (“connecting a winding of the motor to an energy bank via a thyristor”). As Kirschner discloses the structure and the method steps, then the reference meets the end results as well. It is also noted that claim 13 does not require that the electric energy bank and thyristor are in series with the winding (claim 14) and there is no recitation of a diode.

With respect to claim 14, Kirschner discloses the a branch comprising the electric energy bank (10) and the thyristor (Thn) which are connected in series with the winding (Ln).

With respect to claim 16, Kirschner discloses an electric switch comprising an operating device comprising a rotating electric motor (col. 2, lines 37-40) comprising an electric drive circuit (figure) for the winding of the motor, the electric circuit comprising at least one branch, as discussed above in the rejection of claim 1. Claim 16 only appears to differ from claim 1 by reciting more components in the preamble (i.e. an electric switch comprising an operating device comprising a rotating electric motor).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 4-7, 10, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirschner.

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With respect to claim 4, Kirschner discloses that the thyristor can be turned off (col. 3, lines 39-50). It would be obvious to one skilled in the art to shut down the motor (and thereby turn off the thyristor) when the rotor has carried out less than half of the angular motion, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). The actual value of the angular motion is not defined in the claims. One skilled in the art would understand that the angular motion could be 20 rotations, such that the Kirschner apparatus meets the claimed limitations if the thyristor were switched off before the 10th rotation.

With respect to claim 5, Kirschner discloses that the thyristor is adapted to be turned on again after having been turned off in order to achieve the braking phase (col. 3, line 51 to col. 4, line 2).

With respect to claims 6-7, it would be obvious to one skilled in the art to define the angular motion as a range of degrees or half a revolution, as recited in the claims. *Id.*

With respect to claims 10 and 12, the recitation of a single-phase motor and a two-pole rotor are drawn to the end use of the circuit. One skilled in the art would be able to apply the Kirschner circuit to a motor with any desired number of phases (col. 2, lines 45-50) or poles.

With respect to claim 15, Kirschner discloses that the rotational movement of the motor is used to control a printer or teletype equipment (col. 2, lines 37-40). One skilled

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in the art would understand that the rotational movement of the motor makes a current in these devices.

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kirschner in view of Brailsford (US 4,475,068).

Brailsford discloses that it is known to use motors with permanent magnet rotors (col. 1, lines 10-15). Kirschner and Brailsford are analogous because they are from the same field of endeavor, namely electric motors. At the time of the invention by applicants, it would have been obvious to one skilled in the art to use a permanent magnet in the Kirschner motor in order to induce rotation from passing current.

Allowable Subject Matter

13. Claims 2 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claim 2, the prior art does not teach or suggest the configuration of the branch, wherein the electric energy bank is a capacitor. According to the art rejection of claim 1, the electric energy bank is the Kirschner DC source (10). If the Kirschner capacitors were interpreted as the electric energy banks, then they would not be in series with the thyristor and windings, as recited in claim 1.

With respect to claim 9, the prior art does not teach or suggest the configuration of multiple branches, as recited in the claim. Although Kirschner discloses three branches, for each branch to have its own electric energy bank, the Kirschner

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capacitors must be used to meet this limitation. As discussed above, the Kirschner capacitors are not in series with the thyristors and windings.

14. Claim 17 is allowed.

15. The following is an examiner's statement of reasons for allowance:

The prior art does not teach or suggest an electrical switch comprising, inter alia, an electric drive circuit for the winding of a motor, the electric circuit comprising three branches, each comprising an electric energy bank and a thyristor which are connected in series with the stator winding, each branch further comprising a diode connected in parallel with the electric energy bank.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references in the enclosed list show different configurations of thyristors, electrical energy banks and diodes connected to motor windings.

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADI AMRANY whose telephone number is (571)272-0415. The examiner can normally be reached on Mon-Thurs, from 10am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA

/Stephen W Jackson/
Primary Examiner, Art Unit 2836